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Anoestrus in the Mare and its Treatment with Oestrogen

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INTRODUCTION

Several authors have in the past reported the successful treatment of this condition using different hormone preparations.

Catchpole (1934) described two cases of artificially induced oestrus in the mare using 1,000 i.u. pregnant mare serum extract injected subcutaneously. Oestrus occurred after four and eight days' interval respectively in these mares.

Rjasanzeva (1939) was able to induce oestrus in ten barren mares, which had not " shown " to the stallion during the breeding season, by transfusing 700 to 800 c.c. whole blood from mares 60 to 90 days pregnant—*i.e.* at the stage of peak production of serum gonadotrophin.

Day (1940) claimed success using daily injections of P.M.S. in oil subcutaneously for three or more days in succession. In his cases, in which the condition of the ovaries was described, follicles of 1·5 cm. in diameter, or larger, were always present before treatment was begun.

Berliner (1945) injected subcutaneously 20 mg. Diethyl Stilboestrol dissolved in distilled water with a few drops conc. NaOH added to ensure complete solution. He reported the onset of oestrus five days after injection, with ovulation four to five days after the beginning of heat.

Unfortunately none of the authors, except Day, described the condition of the ovaries at the time of treatment.

Two degrees of anoestrus should be recognized by the clinician, a deep and a shallow type. The deep type may occur during the months from November to February, and is characterized by the condition of the ovaries, cervix and vagina. The ovaries are small, shrunken and bean-shaped ; their surfaces may be smooth or present firm nodules of stromal tissue, easily distinguishable from follicles. Occasionally follicles up to 1 cm. in diameter may be palpated, generally at the poles of the ovary. Such follicles are thought to have no clinical signifiance in this condition.

The vagina and cervix of mares in deep anoestrus also present a typical picture. The vagina is dry, blanched and shiny, and the walls are rather difficult to separate. The network of blood vessels in the connective tissue stands out in marked contrast to the dull white colour of the mucous membrane. The cervix is pale, constricted and stands out from the anterior wall of the vagina like a small button mushroom. It is placed centrally and the thin connective tissue folds attaching it to the vagina are clearly to be seen.

Shallow anoestrus is the type usually met with during the breeding season, although an occasional case of the deep type may be encountered. The ovaries have a spongy consistence on palpation and there is almost always some degree of follicular growth, follicles up to 2·5 cm. in diameter being found.

The cervix is larger than during deep anoestrus, due to small amounts of oestrogen secreted from the follicles and ovarian stroma. The connective tissue folds are thickened, diffused, and less distinct. The vagina is of uniform pale pink colour, and the walls are more easily separated than in deep anoestrus.

Thoroughbred mares which have been well cared for during the winter months do not usually exhibit the state of deep anoestrus ; the ovaries will always show some follicle growth, albeit not enough to bring them in heat. It must be remembered that there is no distinct dividing line between the two conditions other than follicular development.

In the writer's experience, it is useless to attempt hormonal treatment of mares in deep anoestrus, whether in or out of the breeding season. The ovaries, with their greatly reduced blood supply, are in no condition to respond to the action of rapidly excreted hormones. In the normal mare the ovaries must contain follicles from 2 to 3 cm. in diameter before oestrus appears. Mares in deep anoestrus must be well fed, and their condition improved before any change in the reproductive organs can be expected.

Experimental Results

Shallow anoestrus in thoroughbreds has been treated clinically with various hormones including pregnant mare serum, acetone dried horse pituitary substance, thyroid extract, thyroxin, pregnancy urine extract, ox pituitary extract and synthetic oestrogen. Only synthetic oestrogen (Stilboestrol) has given encouraging results ; the subjects and treatment used are listed as follows.

Subject	Last foaling	Condition of ovaries	Previous oestrus	Treatment given
1. Thoroughbred. 9 y.o. Barren. 16.4.46	1945	L. (1) 3 cm. R. (1) 1 cm.	27.2.46	10 mg. Stilboestrol s/c., 16.4.46
Result.—In oestrus 20.4.46. Ovulated naturally 26.4.46. Pregnant to mating.				
2. Thoroughbred. 18 y.o. Barren. 19.4.46	1943 Slipped foal 1944	L. (1) 4·5 cm. R. 0	None noted	20 mg. Stilboestrol s/c., 19.4.46
Result.—Follicle became cystic ; was punctured 4.5.46. No further oestrus.				
3. Thoroughbred. 5 y.o. Barren. 24.4.46	1945	L. (1) 3·5 cm. R. Several 1 cm.	3.3.46	10 mg. Stilboestrol s/c., 24.4.46.
Result.—In oestrus 27.4.46 ; ovulation induced (1,500 i.u. Pregnyl) 5.5.46. Pregnant to mating.				
4. Thoroughbred. 4 y.o. Maiden. 1.5.46	—	L. 0 R. (1) 4 cm.	7.3.46	8 mg. Stilboestrol s/c., 1.5.46
Result.—In oestrus 5.5.46 ; ovulation induced (1,500 i.u. Pregnyl) 11.5.46. Pregnant to mating.				
5. Thoroughbred. 12 y.o. Barren. 4.5.46	1944	L. 0 R. (2) 1 cm.	None noted	20 mg. Stilboestrol s/c, 4.5.46.
No result.				
6. Thoroughbred. 7 y.o. Barren. 4.5.46	1945	L. (1) 3 cm. R. Several 1 cm.	4.4.46	15 mg. Stilboestrol s/c., 4.5.46
Result.—In oestrus 9.5.46 ; ovulated naturally 12.5.46. Non-pregnant to mating.				
7. Thoroughbred. 5 y.o. Barren. 5.5.46	1945	L. 0 R. (1) 4 cm.	18.3.46	25 mg. Stilboestrol s/c., 6.5.46
Result.—Follicle subsided without oestrus. In oestrus 22.5.46.				
8. Thoroughbred. 4 y.o. Maiden. 8.5.46	—	L. (1) 3·5 cm. R. (1) 2·5 cm.	30.3.46	5 mg. Stilboestrol s/c., 8.5.46
Result.—In oestrus 12.5.46 ; ovulation induced (1,500 i.u. Pregnyl) 15.5.46. Pregnant to mating.				
9. Thoroughbred. 6 y.o. Barren. 10.5.46	1945	L. 0 R. 0	14.4.46	10 mg. Stilboestrol s/c., 10.5.46
No result.				
10. Thoroughbred. 5 y.o. Foaling. 12.5.46	1946	L. 0 R. 0	None noted	10 mg. Stilboestrol s/c., 12.5.46
Result.—In oestrus 14.5.46, but no follicular development ensued.				
11. Thoroughbred. 12 y.o. Barren. 16.5.46	1945	L. (1) 3·5 cm. R. Several 1 cm.	None noted	10 mg. Stilboestrol s/c., 16.5.46
Result.—In oestrus 19.5.46 ; ovulation induced (1,500 i.u. Pregnyl) 22.5.46. Pregnant to mating.				
12. Thoroughbred. 3 y.o. Maiden. 21.5.46	—	L. 0 R. (1) 4·5 cm.	12.4.46	5 mg. Stilboestrol s/c., 21.5.46
Result.—In oestrus 24.5.46 ; ovulated naturally 26.5.46. Pregnant to mating.				
13. Thoroughbred. 14 y.o. Barren. 23.5.46	1944	L. (1) 3·5 cm. R. (1) 3 cm.	16.4.46	25 mg. Stilboestrol s/c., 23.5.46
Result.—Follicles subsided without oestrus.				
14. Thoroughbred. 9 y.o. Barren. 28.5.46	1944 Slipped foal 1945	L. 0 R. (1) 2·5 cm.	21.3.46	5 mg. Stilboestrol s/c., 28.5.46
Result.—In oestrus 30.5.46 ; remained in oestrus 36 hours with ovulation 1.6.46. Pregnant to mating.				
15. Thoroughbred. 7 y.o. Barren. 1.6.46	1944	L. 0 R. (1) 4·5 cm.	14.4.46	10 mg. Stilboestrol s/c., 1.6.46
Result.—In oestrus 4.6.46 ; ovulation induced (1,500 i.u. Pregnyl) 7.6.46. Pregnant to mating.				

Subject	Last foaling	Condition of ovaries	Previous oestrus	Treatment given
16. Thoroughbred. 4 y.o. Maiden. 3.6.46	—	L. (1) 3·5 cm.	2.3.46	10 mg. Stilboestrol s/c., 3.6.46
Result.—In oestrus 6.6.46; ovulation induced (1,500 i.u. Pregnyl) 8.6.46. Pregnant to mating.				
17. Thoroughbred. 7 y.o. Barren. 6.6.46	1943	L. (2) 1·5 cm. R. (1) 3·5 cm.	18.3.46	20 mg. Stilboestrol s/c., 6.6.46
Result.—Follicle subsided without oestrus.				
18. Thoroughbred. 5 y.o. Barren. 11.6.46	1944	L. (1) 2·5 cm. R. (1) 4 cm.	26.4.46	20 mg. Stilboestrol s/c., 11.6.46
Result.—Silent oestrus 14.6.46; with ovulation induced (1,500 i.u. Pregnyl) 18.6.46. Pregnant to mating.				

The mares were not affected with any pathological condition, and simply represented examples of ovarian dysfunction. Rectal examinations were performed every 48 hours in order to ascertain the best moment for injection, *i.e.* when a follicle of 3 cm. or larger was present.

Where ovulation was induced 1,500 i.u. Pregnyl was injected intravenously and in all cases ovulation occurred between 40 to 48 hours after injection. The mares were covered at the time of injection to ensure a short interval between mating and arrival of the ovum in the Fallopian tube.

DISCUSSION

It seems that mares in shallow anoestrus may be successfully treated by using synthetic oestrogen. Diethyl Stilboestrol (10 mg. per c.c.) in Arachis oil was subcutaneously injected in the cases described.

In cases 7, 13 and 17 the follicles subsided without oestrus; these mares were given rather higher doses (20 to 25 mg.) than the usual, and it may be that the amounts were sufficient to depress the pituitary and cause follicular atresia. I have found that doses of 50 mg. and upwards are, in almost all cases, sufficient to inhibit follicular growth and so depress follicles already present.

Case 2 followed an unusual course. The follicle became cystic and enlarged to the size of an ostrich egg. On puncture, no further symptoms were noted, but the mare did not come in oestrus again during the breeding season.

Cases 5 and 9 did not come in oestrus, but neither mare had any follicle of diameter larger than 1·5 cm. The behaviour of Case 10, which came in oestrus without follicles being present, seems to indicate that the action of the drug is primarily upon the uterus and not on the follicles.

Cases 1, 3, 4, 6, 8, 11, 12, 14, 15, 16 and 18 came in oestrus from 48 to 96 hours after the injection. In all cases ovulation took place naturally or was induced by the injection of pregnancy urine extract (1,500 i.u. Pregnyl intravenously). In all these cases follicular development was present though apparently the amount of oestrogen secreted was insufficient to cause relaxation of the cervix and enlargement of the vulva. It seems that in such cases the administration of small amounts of synthetic oestrogen acts as a supplement to the follicular output, with resultant oestrous phenomena.

The actual dosage must be carefully regulated and must be left to the discretion of the clinician. In maiden mares 5 to 8 mg. generally suffice to sensitize the small firm uterus which these mares possess. In barren mares, which have had one or more foals, 10 to 15 mg. is suggested as a dose depending upon the size and tone of the uterus—the higher dose being employed where the uterus is large and atonic. In all cases, careful rectal examination will give the information required concerning the condition of ovaries and uterus, and the drug should not be employed without this being performed. It must be remembered that the mare is extremely sensitive to oestrogens and that doses of 20 to 25 mg., while occasionally successful, may depress ovarian function.

Summary

1. Eleven out of 18 cases of shallow anoestrus in thoroughbred mares were treated successfully with doses of 5 to 15 mg. Stilboestrol in Arachis oil, injected subcutaneously.

2. Follicles present at the time of injection continued to develop to ovulation during the ensuing oestrus or were induced to ovulate by injection of 1,500 i.u. Pregnyl (pregnancy urine extract).

3. Pregnant matings resulted from the induced oestrus periods in nine of these cases.

4. Careful rectal examination to ascertain the presence of a follicle (3 cm. or larger) must be made before treatment is attempted. Stilboestrol will not cause growth of follicles where these are absent.

5. The dose must be carefully regulated and should not exceed 15 mg.

Edinburgh *

I built my house upon a hill, and in an upper corner of it I contrived a little room which it pleases me to call my study. In the northern gable I cut a lattice, mullioned and plain glazed it that I might look out upon the town.

The garden gate opens upon the steep hill road, and down and up the brae there used to travel on a pony one Walter Scott. Just here, or hereabout, so the story goes, the pony was often halted the while the Wizard might view the city that, perched upon her hills, yet lay below him. I like to think this may have been so, and that it was because of it he hereabout stood Marmion:—

"Still on the spot Lord Marmion stayed,
For fairer scene he ne'er surveyed. . . .
The wandering eye could o'er it go,
And mark the distant city glow
With gloomy splendour red. . . .
Such dusky grandeur clothed the height,
Where the huge castle holds its state,
And all the steep slope down,
Whose ridgy back heaves to the sky,
Piled deep and massy, close and high,
Mine own romantic town!"

Edinburgh is a city serene and beautiful. She is a city of learning and of culture, but, above everything, she is a city of romance.

Up and down that Royal Mile of her causewayed High Street, with its Palace at the foot and its Fortress at the top of it, there moved a phantasmagoria, a pageant of Scottish history. Kings and Queens were there, Abbot and Canon, Sandman and Fishwife, Prelate and Presbyter, Dame and Knight, Carrier and Caddie, Burgess and Statesman, Gentle and Semple folk, a seething, motley clamjamphrie (for no other word can better describe the press), all cooped and bejostled together upon a single narrow ridge in a kind of amiably quarrelsome intimacy, for a space of 700 years.

Up and down, in and out, this Street went Malcolm and David and the Bruce, to be followed by the Royal Stuarts. Down this Street there rode that gay gallant, our fourth James, with his bride, Margaret of England, to meet the brave and gladsome welcome of his people. Soon he rode up the Street—to Flodden, followed by the fearful, yet brave, farewells of these people—or what remained of them. So soon again there rode up the Street to woe and lamentation the lone Randolf Murray!

To this Street came Mary, at last to take her place truly as Queen of Scots, at Holyrood. There she was welcomed with musik and merrie-making, with fiddles and little rebecs and with fyres of joy. But quickly enough she was a "monster of evil," and had need to seek refuge from the fury of her detesting subjects.

At the top of the Street was born James the Sixth and First; him in whose person were the Crowns united. At the bottom was bred his son, Charles, and here, in Holyrood, his head received the Crown. Ah, that he should so soon have lost both! Thereupon up and down the Street clanged Cromwell and his Ironsides, and the Street knew its Kings and Queens no more—Aye, but a Royal Prince came back to it, and in the '45 the white cockades were fluttering at the Cross for Charlie; up the Street broke the wild huzzahs from the Palace of his Royal Fathers, and down the Street roared the cannon balls from the Fortress that would have none of him.

But (to make a quip) the history of a country is not written in its blue blood so much as it is moulded in its grey matter. From the High Kirk in this Street, that of Sanct Geile, that old Hebrew Prophet in the guise of an Edinburgh Minister, John Knox, dang the pupit brods tae blads as he thundered against "Preastis, Frearis, Chanonis and rotten Papistis, and the whole

* Meeting place of Congress, N.V.M.A., July 27 to August 1st, 1947.

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monsterous Regiment of Women." Was it for a wonder that his Queen, cold and brave and proud Stuart that she was, at last brake doun and weepit?

In that Kirk, an apple wife threw a stool at a Dean, and in the action began the remaking of the ideals of her nation. Cheek by jowl with the Kirk there stood the hated Tolbooth, the Heart of Midlothian, the Scottish Bastille, now, like that of Paris, no more. But its entrance is yet marked in the causeway with the device of a heart; the centre of it, this very day, is wet with the spit of all whose memories are long or in whom superstition lingers. Here, in this close was a portion of the National Covenant signed: that some of the quills dripped blood was not for lack of ink! From that balcony Argyll watched his enemy Montrose, "a traitor to the Covenant," and tied in a tumbril, go up the Street to the headsman's block; but his triumph was not for long: a change of governments and he, "a traitor to the King," in like predicament, followed to the same place.

There, in that court, lived James Boswell, and up and down the Street he led—much as a man might lead a bear—the peching, contemptuous Samuel Johnson. In this court lodged a rude ploughman named Burns (sharing with another a room for which the worthy Mrs. Carfrae charged three shillings in the week). Yonder in that close he read the proofs of the first Edinburgh Edition of his poems. "This month," says Carlyle, "he is a ruined peasant, his wages seven pounds a year, and these gone from him; next month he is in the blaze of rank and beauty, handing down jewelled Duchesses to dinner; the cynosure of all eyes." There was born Robert Fergusson, him whom Burns called "My elder brother in misfortune, and by far my elder brother in the Muses." Here in the Kirkyard on the Street his body lies, along with a goodly company; among them Professor Gregory, who, in a house across the way, compounded his famous "Mixture." There lived Munro *primus*, bred in the school of Boerhaave, and one of the founders of the Edinburgh Medical School. His son, Munro *secundus*, if an even greater anatomist, is best known to us by the name of a foramen and by the invention of the stomach tube for cattle. In this close Oliver Goldsmith (then a medical student) attended the dancing assemblies. In that other, there lived and died Adam Smith, whose *Wealth of Nations* made him "The Father of Political Economy." There was the shop, and here stands the house, of Allan Ramsay, wigmaker and barber, bookseller and poet, editor of the famous *Tea-Table Miscellany*, author of the *Gentle Shepherd*.

But, enough! Have I not said that at the top of the Street was born he who united the crowns? Well, here in a cellar (for fear of the mob that ranted above) were received signatures to the treaty that united the Nations. From these two happenings in the Street, the Street itself quickly changed from gentility to slumdom, for with the Wisest Fool in Christendom went the Court, with the Act of Union went the Statesmen, and with both Crown and Council went the fear of English invasion and sack. What needs then that the lieges should remain huddled and cribbed in these rookeries on the ridge? So, in time, they threw out broad bridges to the south and to the north, over the ravine of the Cowgate and the morass of the Nor' Loch, and there arose houses, commodious, builded finely of faced stone, set out in regular squares and streets; whereupon, the higher orders flowed, or overflowed, from the towering tenements of the Old Town into the mansions of the New.

The change was made slowly at first and not without caution, bred of suspicion and prejudice. "One old lady fancies she should be lost if she was to get into such a habitation; another, that she should be blown away in going over the new bridge; and a third lives in the old style, because she is sure that these new fashions can come to nae gude." But eventually none was left in the old High Street but the smaller burgesses, the craftsmen, the carriers and the caddies.

This time is epochal in the history of Edinburgh and, indeed, in that of Scotland, for, freed from the direful effects of religious and political strife, the mind of the people took a new bent, or, maybe, rather its natural bent was given opportunity to direct itself. The importance of a sound educational system had been emphatically preached by Knox and his fellow reformers, and the admiration for, and the pursuit of scholarship became something of a passion. The University was rebuilt; new chairs were created; academic conditions were so ordered that She could receive lads of parts from even the humblest households. The High School became world famous; the Arts were esteemed; Science advanced. The founding of the Royal Society of Edinburgh was but one of the several signs of the times. Indeed, it is true that Dutch Leyden now gave place to Scottish Edinburgh as the World's Centre of Medical Teaching.

Then the New Town became famous (and how could it help itself!) since it sheltered such as Jeffrey and Cockburn, Christopher North, Henry McKenzie (that blood-thirsty *Man of Feeling*), John Leyden, Dugald Stewart, De Quincey, Lockhart and, towering above and beyond them all, Walter Scott.

In Medicine there was John Barclay and Robert Knox (Yes, his name must be said, Burke and Hare or no). Such were the times that "unless there be a fortunate succession of bloody murders, not three subjects are dissected in the year." There was Joseph Black who discovered carbon dioxide, but who had modest doubts as to whether this was sufficient for a thesis to be presented for a Doctorate in Medicine; and there was Cullen and the Duncans, father and son, and Liston and Syme, "he who never wasted a word, nor a drop of ink, nor a drop of blood," and James Young Simpson, that erstwhile poverty-ridden country laddie (he was a Bathgate baker's bairn), so sensitive that he could not thole the screams of a woman that was held down upon a table while undergoing excision of the breast; he ran out of the theatre, with his hands on his lugs, but he returned with the resolve that he would set himself for the remainder of his life to discover how the pain incidental to surgery and to childbirth could be overcome. He resorted to the use of various drugs; he even experimented with the practice of hypnotism, until eventually he discovered the anaesthetic properties of chloroform. Yes, we can still show you that dining-room in Queen Street where the great discovery was made, and tell you, too, queer stories that sprang from the making of it; but here it will do to quote from the cash book he kept while a student:—

> "Let not thy recreations be expensive, lest the pain of purchasing them exceed the pleasure thou has in their enjoyment. Finnan haddies 2d.; Bones of the Leg £1 1s.; Subject £2; Spoon 6d.; Bread and Tart 1s. 8d.; *Duncan's Therapeutics* 9d.; Snuff 1½d.; and *Early Rising* 9½d."

"The snuff and the book on early rising," says his biographer, "show how anxious he was to 'sit late and rise betimes.'" This other quotation relates to a time many years after, when

> ". . . . To the outside world he seemed the one Edinburgh figure of first importance. A citizen was presented at the Court of Denmark to the King of that country: 'You come from Edinburgh,' said His Majesty, 'Ah! Sir Simpson was of Edinburgh.'"

And here, at 9, Charlotte Square, lived Joseph Lister during his tenure of the Chair of Clinical Surgery in Edinburgh. He had then returned from Glasgow, where he had worked out his germ theory of suppuration and the application of his antiseptic treatment of wounds.

> "His face at once benign and proud and shy.
> If envy scout, if ignorance deny
> His faultless patience, his unyielding will,
> Beautiful gentleness and splendid skill,
> Innumerable gratitudes reply."

Odd! that ane auld tounis College should have been so closely thirled to these two who, with their anaesthetic and antiseptic, have calmed and cleansed surgical procedure and made of it a blessing to man and his animals.

But to return to the old High Street, forsaken of its nobility and culture—what of it now? You can trace the remnants of the Royal Palace of a Queen Mother in the gable of that rotting slum. This emblazoned stone bore a noble crest, now crumbling in its decay; that legend incised deep on the ashlar is ill to read through the chalk scribblings. This stout burgess house where once were banqueted a King and Queen is beflagged with a family washing. Through that darksome entry there lived the greatest European philosopher of his time; and those that remain of the arcades along which swaggered the booted and spurred and rapiered bravoes can be seen through the window of a milk shop!

But if, at the end of the Eighteenth Century, its nobility and gentry had deserted the old Street, there still remained (as has been said) its craftsmen, and among these, at the foot of Chessell's Court in the South Back of the Canongait, was James Clark, "Hyrer of Coaches and Ferrier to His Majesty for Scotland."

This was an outstanding personality, a cultured man of rare powers of vision, whose first desire it was to foster the then but newly recognized Veterinary Science. He attacked, not violently, but restrainedly, and with reasoned argument, the pernicious practices of his day. He did nothing short of revolutionizing Veterinary Hygiene; and of that science Frederick Smith calls him "The Father, not only in this country, but in Europe." He wrought, too, a far-reaching change in the principles of shoeing, although in this, the Scot's conceptions had been anticipated by those of that equally brilliant Frenchman, La Fosse. As early as 1788, at a time when no organized veterinary teaching existed in these Islands, he conceived a System of State Veterinary Schools. He protested that for them who would study the diseases of

animals there was nothing but reading, and that "is not sufficient to qualify a man either for the profession of physician or farrier." He consistently worked for the establishment of a School in Edinburgh, and was all but successful when "the political situation rendered it impossible." (By this, maybe, he means the abrupt reaction to conservatism that was occasioned in this country by the development of revolution in France.) Well might we cry: "Confound their politics!" But, let that be! For here, even now, there comes bravely trudging towards the city a young blacksmith, John Dick, with his bride, Jean Anderson. They come from somewhere Aberdeen-awa, and doubtless to seek their fortune; but they come (that they could but know it!) to present to Veterinary Science one of her most brilliant exponents; for here they settled near the Palace, at the foot of the Street, and here in the historic court of the White Horse Inn in which John had his forge, their son, duly—nay, long over duly—baptized William, in the College Kirk, first saw the light. But why re-tell an already well told tale? Did not the boy grow up to stand with his father at the anvil, to help him with his horse doctoring, to be fired with the ambition of founding in Edinburgh a Scottish Veterinary School, which, after much struggle, he at long last did build, though the foundations of it (let us be mindful of this) had been cut by Clark near 40 years before!

Unlike Clark, Dick stood forth as a private teacher and independent of politics, and he was a shrewd and determined fighter. The State gave him no recognition. Well, what of it? He was backed with 50 pounds (pounds, English sterling!) from the Highland Society. The Civil and Military authorities would not recognize his students. Good! He would see to it (and he saw to it) that they eventually did. He was a great clinician, but he was nothing if not a "practical man." In his wisdom he knew this, and he chose as his associates two among others, who, in their cast of mind and in their professional equipment, were his antitheses—and his natural complements.

John Barlow, that great gentleman, was his anatomist, physiologist and pathologist. He introduced the microscope to veterinary teaching in Britain; but this is merely indicative of the nature and stamp of Barlow, for he was imbued with true scientific ideals. His creed was that of the Society of Friends; his practice was the strict tenets of that creed. Withal, his was a warm and a very lovable personality. His death, so early, robbed our Science of a truly fine worker.

John Gamgee was the other, and what have I to say of him, that genius of sweeping and terrific activity; far transcending even Dick in his intellectual talents, yet failing miserably beside him in the sick box! Temperamentally, they were dangerous incompatibles. They were as sulphur and a chlorate, these two, and only needed contacting and rubbing up together to produce the inevitable explosion—rather explosions, for these continued throughout one year, and at the end of it had well-nigh shaken the Clyde Street School to its foundations; though the rival College which Gamgee established in the Lothian Road was, in itself, a poor enough thing.

These three, this wonderful triumvirate, Dick and Barlow and Gamgee, brought, as it were, providentially to the one place; each as an individual (but only as an individual) making a deep mark upon the Science! Had the Fates been kinder, had Death spared and Human Nature been but a thought more tolerant, what would not have been the outcome of their joint efforts could they have pulled together in the one harness!

Yet, that is but for an idle reverie. We can show you the disiaskit-looking house at No. 1 Pilrig Street, wherein John Barlow died, and the ornate railway hotel whereon stood John Gamgee's College, and you may look on these places, and, if you will, you may ponder and be sad! But, if you would see John Barlow, then see the splendid Spirit of Science that pervades our profession to-day, and see John Gamgee in the World's State Veterinary Services—aye, and be glad for their gifts to us.

And now, after over 40 years' continuous teaching, the veteran Dick is dead; but that awesome, yet lovable, old woman, his sister Mary, is very much alive, and from her eyrie across the Firth, in Craigennochie, closely watches the fortunes of his school. She welcomes to her brother's place William Williams, but six years later, with what feelings you may conceive, she sees him depart, and not alone. He marches out, with full 40 students at his back, to found his New College at Gayfield House, while, loyal to the old School, there remain but nine. What would, then, have been the fate of the stricken Dick's College it were difficult to presage had not Williams been immediately followed by a fellow Yorkshireman, Thomas Walley, whose reign is remarkable for a certain quiet wisdom that begot the restoration of progress and peace.

Here we may well pause—but let us take just one more keek! There in that quiet garden off the thrang Gorgie Road, you may glimpse a Caroline mansion: it was the home of Finlay Dun.

To-day, Edinburgh is rightly known as a deeply traditioned veterinary centre. Her celebrated School continues to cast abroad the knowledge of that Science whose bournes her Research Institute struggles to enlarge.

. . . . .

It was, maybe, for these (among some other) things that in my northern gable I cut a lattice, through which I might look out upon the town.

J. RUSSELL GREIG.

CLINICAL COMMUNICATION

Subcutaneous Emphysema in the Dog

R. W. M. GOVER, M.R.C.V.S.
Holmwood, Nr. Dorking

Subject.—A four-year-old miniature poodle bitch.

History.—She was attacked by a larger dog in the morning but did not appear to be injured. In the afternoon she was noticed to be blown up and was brought to the surgery for examination.

Symptoms.—The bitch had a thick layer of gas in the subcutaneous tissues and appeared similar to a calf that after slaughter is blown up to facilitate removal of the hide. This layer extended from the cheeks and head to the hind legs. The bitch appeared tired and listless but drank readily although she would not eat. Temperature normal, respiration slightly more rapid than usual. There was no external wound visible but there was a certain amount of thickening on the underside of the throat and therefore a tentative diagnosis was made that there was some damage to the trachea which caused expired air to pass to the subcutaneous tissues.

Treatment.—A wide bore hypodermic needle was inserted under the skin and by massage most of the gas was pushed along to the needle and so out from under the skin. Within half an hour the patient was as drum-like as previously. It was considered whether or not to perform a tracheotomy but owing to the uncertainty of the site of damage—if damage there was—this was not attempted.

The prognosis was grave but destruction was not carried out owing to the value of the dog and the wishes of the owner.

The bitch died about 3 p.m. the following day.

Post-mortem Examination.—A slit was found in the trachea between two of the tracheal rings. The slit occupied two-thirds of the trachea, only the dorsal third being undamaged.

This case is reported owing to its unusual nature and I would be interested to know whether any practitioner has knowledge of a similar one.

ABSTRACTS

[Toxicity of Phenothiazine Derivatives Excreted in the Milk of Dairy Cows Treated with Massive Doses of the Drug. Wise, G. H., James, C. A., & Anderson, G. W. (1947.) *J. Dairy Sci.* **30**. 55-59.]

It has been suggested that the species most susceptible to phenothiazine poisoning are man and cattle and that the young are less resistant than adults. Therefore it would appear that the human infant might be highly sensitive. Certain breakdown products of phenothiazine are excreted in the milk of ewes and goats and it appeared that milk of lactating animals treated with phenothiazine might be a potential health hazard.

Three cows were dosed with 125 grammes commercial phenothiazine, or approximately twice the maximum recommended adult dose. No changes were observed in the cows except for a sharp drop in milk yield in two and a slight decrease in the third. After two or three days the milk yield returned to normal in two, though it remained low in the third, which had been in milk seven (calendar) months. The udder was stained pink, presumably from contact with urine. Chemical examination of the milk showed phenothiazine derivatives to be present for periods of 36 to 60 hours after dosing, being heaviest at the 12- and 24-hour intervals. Samples of milk taken at the height of excretion were fed to month-old rats which consumed from 70 to 77 c.c. per 100 gramme body weight. No deleterious effects were observed nor was the milk obviously unpalatable. There did appear to be a preservative effect as the milk samples were in excellent condition after storage for 31 days at 35° F. and for several days in a warm room. This effect has been attributed to thionol. Heat treatment of the affected milk did not produce any harmful effect.

Over 80 per cent. of the therapeutic dose is eliminated in faeces and urine, so only a small percentage could be excreted in milk. It is, however, suggested that milk from treated cows be not used for human consumption during the period of excretion of the breakdown products, namely, two to three days after dosing.

The conclusion reached was that although phenothiazine derivatives are excreted in the milk of treated cows the concentration attained from recommended therapeutic doses is unlikely to be harmful to the consumer.

J. S. S.

* * * * *

[The Male Hormone Content of Ruminant Manure. Turner, C. W. (1947.) *J. Dairy Sci.* **30**. 1-8.]

In 1942 Riley and Hammond showed that appreciable amounts of male hormone are liberated in the manure of dairy cattle, the largest amount being found in lactating cows in various stages of pregnancy. An assay of this hormone in manure was carried out, using the stimulating effect upon the comb growth of cockerels as the criterion of measurement.

The urine free manure was dried in an electric oven in thin layers at a temperature of 45° C. and after 48 hours was ground to a powder. White Plymouth Rock chicks were fed a basic ration in which 10 per cent. ground manure replaced an equal quantity of alfafa meal. The average comb weight and the comb weight per 100 gramme body weight were recorded. Up to 20 per cent. of this mixture could be added without upsetting appetite. Experiments were divided under different headings as follows:—

(1) The effect of drying temperatures was examined. As the temperature increased there was a gradual inactivation of the hormone present until at 75° C. all of it was destroyed. 45° C. for 24 hours appeared to be the optimum.

(2) The androgen content of the manure of cattle, goats and sheep was compared. The average weight of comb in chicks fed manure from lactating cows was 225·2 mg. as compared with the normal 61·3 mg. In bulls, only one-quarter of the amount of the hormone was to be found as compared with that of lactating cows. The manure from lactating goats had no appreciable effect upon comb growth and in the case of a single non-pregnant ewe there was only a slight response.

(3) The source of the androgen in cow manure. Contents of different portions of the digestive tract, including the rumen, omasum, the intestine and the liver and bile were all examined separately in an attempt to discover the point at which the hormone was introduced. Unfortunately as milking cows were not available the results were inconclusive.

The work carried out indicated that feeding of dry manure to chicks from hatching to sex maturity stimulated growth in the pullet stage and egg production commenced earlier. In addition to this property of the manure, the authors emphasized the value of such a supplement for its vitamin B content.

N. S. B.

REPORT

[Canada. Report of the Science Service, Dominion Department of Agriculture, for the year ended March 31st, 1946.]

The Science Service of the Dominion Department of Agriculture was established as a separate unit in 1938 when a general reorganization of the Department took place. Five existing divisions were combined at that time. The Plant Protection Division was added to the Service in 1942.

Science Service includes the research Divisions of Animal Pathology, Bacteriology and Dairy Research, Botany and Plant Pathology, Chemistry and Entomology, and the Division of Plant Protection.

The report does not attempt to present in detail the results of investigations on the many projects under way, but, where further information is desired by research workers in particular subjects, enquiries should be directed to the laboratories concerned.

The work of the Division of Animal Pathology comprised: (*a*) Research, (*b*) Service and (*c*) Manufacture of biological products. Research effort was concentrated mainly on conditions adversely affecting the health of food-producing animals, as it was considered that disease problems which stood in the way of maximum production should receive priority. Thus, swine fever, infectious anaemia of equines, transmissible leucosis of fowl, pullorum disease, brucellosis and mastitis of cattle, tuberculosis in swine and parasitic diseases are listed as under active investigation. Laboratory services were available to veterinary surgeons, physicians, livestock owners and others as in former years. Biological products included tuberculin, mallein, johnin P.P.D., *Brucella abortus* antigen and *Pullorum* disease antigen.

S. A. E.

QUESTIONS IN PARLIAMENT

Fowl Pest

Mr. Medlicott asked the Minister of Agriculture if he is aware of the increase in the number of cases of fowl pest which have occurred during the present month; and what steps are being taken to prevent the further spread of this disease and to remove its cause.

Mr. T. Williams: Yes, Sir. Poultry-keepers are under an obligation to report to the police any suspicion of fowl pest. By early intimation of the existence of the disease, the spread of infection can be prevented, and I urge all poultry-keepers, in their own interests, to report immediately all suspected cases. As regards removing the cause, as I have already said in answer to previous Questions, the importation of live poultry has been prohibited, and the importation of frozen poultry from Europe is being limited to headless and eviscerated carcases. Further, I have made an Order under the Diseases of Animals Acts requiring all poultry waste to be boiled before birds are allowed access to it. Where deemed necessary, special restrictions on the holding of markets have been, and will be, imposed.

Colonel Gomme-Duncan: Can the right hon. Gentleman say whether these Orders which he has issued are applicable all over Great Britain, or only in England and Wales?

Mr. Williams: I can only speak for England and Wales.

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Steel Traps

Sir T. Moore asked the Minister of Agriculture whether he intends to accept the steel spring traps now adopted by the R.S.P.C.A. as suitable for general use in the countryside; and if he will inform A.E.Cs. to this effect.

Mr. T. Williams: I assume the hon. and gallant Member refers to the trap designed by Mr. Sawyer, of Wiltshire, some hand-made models of which were tested by my Department with promising results at a trial in Hertfordshire last March. I understand that this model has been further improved and that the R.S.P.C.A. are now arranging for its production in some quantity. As soon as the necessary supply is available, I shall be glad to arrange for a comprehensive test of its efficiency to be made in collaboration with the R.S.P.C.A.

Sir T. Moore: Thank you very much.

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Streptomycin Tests (Cats)

Mr. Viant asked the Secretary of State for the Home Department what is the exact nature of the penicillin tests for which the Medical Research Council needs cats; and whether the experiments will be performed under anaesthesia or not.

Mr. H. Morrison: I have been asked to reply. There has been some misapprehension about the request for help in connection with the supply of cats, which was made to the National Farmers' Union with the authority of the Medical Research Council. These animals will be needed not specially for any penicillin research, but to assist British manufacturers of streptomycin to test the drug for freedom from its chief impurity, histamine. The tests are made under anaesthesia.

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Rinderpest (East Africa)

Mr. W. Fletcher asked the Secretary of State for the Colonies with a view to increasing the possibility of meat exports from Eastern Africa, what is the position in regard to the prevalence of rinderpest there; and what is the possibility of the complete eradication of this disease from Eastern Africa.

Mr. Creech Jones: The Governments are pushing ahead with a policy of immunization and this is showing very successful results. There has been no large outbreak since 1940. The objective is that all cattle should eventually be immunized. Thereafter, the disease would still exist amongst wild game and it would, therefore, be necessary to continue to inoculate young and susceptible animals. It is accordingly not yet possible to say that complete eradication is practicable, but stock can certainly be protected against it.

NATURAL HISTORY MUSEUM (DIRECTORSHIP)

Sir JOHN GRAHAM KERR asked the Chancellor of the Exchequer if, in view of the increased importance of modern developments in the natural history sciences in their bearing upon public health, agriculture, animal husbandry, fisheries and general culture, he will take steps to ensure that the emoluments of the Director of the Natural History Museum, the chief national centre of such sciences, shall be not less than those of the Director of the National Physical Laboratory.

Mr. DALTON : The salary of this post was increased to £2,000, as from January 1st, 1946, in agreement with the Trustees. This figure seems reasonable in relation to the salaries of comparable posts, including that of the Director of the National Physical Laboratory.

Sir J. GRAHAM KERR asked the Chancellor of the Exchequer if, in view of the disquiet among British naturalists regarding the directorship of the Natural History Museum, he will suggest to the Trustees of the British Museum the desirability of their consulting with the Councils of the Zoological, Linnean and Royal Entomological Societies, as being the three most important natural history societies, regarding any contemplated appointment to this post.

Mr. DALTON : I will certainly pass on the hon. Member's suggestion to the Trustees.

ROYAL COLLEGE OF VETERINARY SURGEONS

Membership Examinations, July, 1947

LIST OF SUCCESSFUL CANDIDATES

London

FIRST EXAMINATION:

Aitken, Miss E. A.
Bailes, Miss J. A. (B)
*Barker, G. L.
*Bevan, T. G.
Blyth, A. M.
Bowley, I. M.
Brain, J. R.
*Brockis, D. C.
Clarke, G. R.
Claydon, R. K.
Cook, T. F.
*Cooper, B. S.
Cripps, J. H. H. (C)
*Crooks, J. L.
Davies, D. R.
*Downie, N. F.
Dring, J. C.
Edwards, Miss B.
Edwards, D. G.
Edwards, T. W.
Espitalier-Noel, F. S. R.
Evans, A. D. G.
Evans, H. T. J.
*Felgate, C. A. G.
Fishwick, R.
Fowler, N. G.
*Franks, P. W.
Gilmore, J. D.
Grimsell, D. M.
Holcombe, R. B. (C)
Holton, J. A. (C)
*Howell, D. G.
*Hutchings, D. A.
*Jenner, F. H.
*Johnson, Miss P. L.
Jones, A. P.
Jones, B. V.
Kennea, T. L. (C)
Mace, J. W.
Marston, J. R. T.
Neal, N. W.
Newbery, M. J. E.
Newbold, T. F.
Peters, W. G. D.
Polley, M. J.
*Rees, W. H. G.
*Rham, G. G.
*Sainsbury, D. W. B.
Stokes, Miss L. D.
Stokes, S.
Thomas, H. J. D.
Thomson, J. McC.
Thoumine, R. H.
Waters, P. J.
Watkins, Miss C. M.
*Wickenden, P. F.
*Williams, W. D.

* denotes 2nd class honours.
(C) denotes credit in Chemistry.
(B) denotes credit in Biology.

SECOND EXAMINATION (*Old Syllabus*):

Bongard, A. L.
Croft, Miss P. G.
Stokoe, H. P.

SECOND EXAMINATION (*Physiology (including Biochemistry) Revised Syllabus*):

Bateson, W. B.
Beaumont, J. E.
Beach, J. E.
Beckett, R. L.
Blampied, N. le Q.
Bradley, G. E.
Burman, P
Carter, Miss N. C. C.
Corder, J.
Cox, G.
Davies, D. C.
Davies, J. I.
Davies, W. E. O.
De Gruchy, P. H.
Dwane, J. B.
Evans, G. A. J. C.
Fumpston, W. A.
Garland, J. E. (credit).
Gibson, Miss M. A.
Goodwin, R. F. W. (credit).
Gregory, B. M.
Hall, L. W. (credit).
Hannaford, P. J. (credit).
Harley, P. J.
Harthoorn, A. M.
Heath, J. S.
Hide, D.
Ikin, P.
Jack, E. J.
Jackson, B. N.
Jacques, P. A.
Johnson, Miss A. I.
Jones, D. G. H.
Jones, I. I.
Jones, J. E. T.
Kirkby, W. W.
Mercer, P. H.
Mookerji, A.
Overton, M.
Paine, G. D.
Prasad, Y.
Restall, V.
Sherlock, B. C.
Simpson-White, J.
Smalley, P. R. (credit).
Smith, A. C.
Stockwell, Miss J. I.
Threlkeld, J. M.
Wadsworth, F.
Wheeler, Miss E. C.
Williams, B. M.

(*To be continued*)

NOTES AND NEWS

Diary of Events

July 18th.—Meeting of the Yorkshire Division, N.V.M.A., at Harrogate (Queen Hotel), 2 p.m., followed by Surgical Demonstrations at Starbeck Abattoir.

July 18th.—Annual General Meeting of the Lincolnshire and District Division, N.V.M.A., at "Highfield," Sleaford. 2.30 p.m.

July 18th.—Summer Meeting of the Mid-West Division, N.V.M.A., at Frome (see notice).

July 22nd.—Meeting of the Southern Counties Division, N.V.M.A., at Brackendene, Burley, Nr. Ringwood, 2.30 p.m.

July 24th.—Meeting of the Royal Counties Division, N.V.M.A., at Marlborough, 10 a.m.

July 27th—Aug. 1st.—N.V.M.A. Annual Congress in Edinburgh.

July 29th.—Meeting of the Association of Veterinary Inspectors, at the Royal (Dick) Veterinary College, Edinburgh, 3.30 p.m.

July 31st.—12th Annual Meeting of the Royal (Dick) Veterinary College Alumnus Association, at the Royal British Hotel, Princes Street, 7 p.m.

July 31st.—Annual Meeting of the Association of Veterinary Teachers and Research Workers, at the Royal (Dick) Veterinary College, Edinburgh, 10.30 a.m.

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Scheme for the Control of Certain Diseases of Dairy Cattle in England and Wales

The Council of the National Veterinary Medical Association, after agreement with the National Farmers' Union and the Ministry of Agriculture, recommends that undertakings under the Scheme for the control of Certain Diseases of Dairy Cattle in England and Wales, which are due to lapse and which both parties are willing to renew on the basis of existing agreements, should be extended for a further twelve months, pending revision of the Scheme in the near future.

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N.V.M.A. Congress in Edinburgh

There has now been distributed to members the N.V.M.A. 1947 Handbook concerning Congress and the Annual General Meeting, embodying full information relative to the Association, including the Register of Members, the Annual Report, the programme of Congress and other features; while the papers to be presented to Congress also have been circulated. Any member failing to receive these documents by the end of the week should inform the General Secretary.

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As accommodation in Edinburgh is now very difficult to obtain, members still desirous of obtaining rooms for the Congress should get in touch immediately with the Honorary Local Secretary, Professor A. Robertson, Royal (Dick) Veterinary College, Edinburgh, 9.

Delegates to Congress

In our issues of June 14th and 28th we published lists of delegates from other countries who have accepted invitations to attend the Association's 1947 Congress.

We are glad to announce the following addition to the list: Professor Bressou, Principal, L'Ecole Vétérinaire d'Alfort, Alfort, Paris.

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The Demonstrations and Operations

We are now able to give the detailed programme of demonstrations and operations which has been arranged for Edinburgh, as follows:

DEMONSTRATIONS

1. Surgical Specimens, by Clinical Department, Royal (Dick) Veterinary College.
2. Physiological and Biochemical Demonstrations, by Physiology Department, Royal (Dick) Veterinary College.
3. Laboratory Methods, by Bacteriology Department, Royal (Dick) Veterinary College.
4. Demonstrations of Specimens, by Anatomy Department, Royal (Dick) Veterinary College.
5. Equine Pregnancy Diagnosis and Toxicological Analysis, by Hygiene Department, Royal (Dick) Veterinary College.
6. Parasitic Helminths of Sheep, by Dr. Morgan, Zoology Department, Edinburgh University.
7. Fluorosis Specimens, by Prof. G. F. Boddie, Royal (Dick) Veterinary College.
8. The Role of Microflora in Ruminant Digestion, by Mr. K. C. Sellars, Institute of Animal Pathology, Cambridge.
9. Epizootic Lymphangitis, by Mr. J. J. Bullen, Institute of Animal Pathology, Cambridge.
10. Some Uncommon Parasites, by Prof. Bosworth, Research Institute in Animal Pathology, Royal Veterinary College.
11. Bovine pyelo-nephritis, by Prof. Bosworth, Research Institute in Animal Pathology, Royal Veterinary College.
12. Some Diseases of Poultry, by Mr. J. E. Wilson, Poultry Laboratory, Eskgrove.
13. Acid-fast Infections in Wild Birds, by Dr. A. McDiarmid, A.R.C. Field Station, Compton.
14. Skin Tuberculosis, by Mr. J. D. Rankin, Ministry of Agriculture Laboratory, Weybridge.
15. Rabies, by Mr. J. D. Rankin, Ministry of Agriculture Laboratory, Weybridge.
16. Tuberculin Production, by Mr. A. B. Paterson, Ministry of Agriculture Laboratory, Weybridge.
17. Trichomoniasis, by Dr. E. L. Taylor, Ministry of Agriculture Laboratory, Weybridge.
18. Artificial Insemination, by Mr. D. L. Stewart, Shinfield, Reading.
19. Vesicular Lesions in Farm Animals, by Dr. W. M. Henderson, Pirbright.
20. Typing of Virus of Foot-and-Mouth Disease, by Mr. J. B. Brooksby, Pirbright.
21. Foot-and-Mouth Disease in the Hedgehog, by Mr. H. H. Skinner, Pirbright.

All exhibits will be open for inspection during the whole of Congress week. Nos. 1-5 will be staged in the laboratories of their respective departments, No. 6 in the Biology Practical Class Room and the remainder in the the Embryology Class Room (adjacent to the Trades Exhibition) and in the Hygiene Practical Class Room nearby.

Explanatory lectures on various demonstrations will be given at pre-arranged times.

OPERATIONS

Some surgical operations on large animals will be demonstrated by Prof. J. G. Wright, Liverpool, in the Large Operating Theatre, on Wednesday afternoon, July 30th, commencing at 3.30 p.m.

In addition the Small-Animal Operating Theatre will be open daily from 10.15 a.m. to visitors who may wish to see the ordinary routine operations.

FILMS

A film entitled "Stomach Worms in Sheep" will be shown in the Hygiene Lecture Theatre, on Thursday afternoon, July 31st, at 2.30 p.m., and will be prefaced by a short address by Dr. E. L. Taylor, Weybridge. It will be followed by a colour film on "The Science of Milk Production."

The Programme—A Correction

N.B.—In the revised programme published in our last issue it was erroneously stated that the films to be shown on the afternoon of Thursday, July 31st, will be exhibited in the Freemasons' Hall. The films will be shown in the "Dick" College and the Ladies Veterinary Benevolent Guild Dance will take place in the Freemasons' Hall on the evening of that day.

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Golf Tournaments

The restoration of the Golf Tournaments to the social side of the Congress programme is a pleasant post-war feature, but we regret to learn that very few entries so far have been received for either, and we urgently would remind intending participants that applications have to be sent in as indicated below.

The Men's Competition for the Simpson trophy will be played off at the Luffness Golf Course, on Thursday, July 31st. Entries should be notified to Prof. T. Grahame, Royal (Dick) Veterinary College, not later than Monday, July 28th. Green fee of 5s. per person.

The Women's Competition for the Dunkin trophy will be played off at the Liberton course, Kingston Grange, on Wednesday forenoon, July 30th. The green fee is 2s. 6d., and entries should be sent to Mrs. A. Gofton, 458, Lanark Road, Juniper Green, Midlothian, not later than July 19th.

"Helping You Round"

The unique city of Edinburgh is rich in veterinary—as in other—history, and as an aid and fillip to this supremely worth-while study by the visitor we commend the article by Dr. Russell Greig published elsewhere in this issue. Another timely publication is the issue of a new local guide book, for which enquiries should be made when on the spot, which is heralded by the *Observer*, under the heading quoted above, in the following terms: ". . . And now comes Edinburgh with a really majestic 2s. book: there is a text by Moray McLaren and Lewis Spence, both Edinburgh men of letters, and photography that does justice as far as picture can do to the local glories of nature's rock, and man's use of it in the Scottish capital. . . . This Official Guide for once makes the word official no synonym for prosy, flat-footed writing. So wonderful a piece of history in stone cannot be over-written and now gets its due."

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CHARNOCK BRADLEY MEMORIAL FUND

Former pupils of the "Dick" College who are contemplating subscribing to the above and have not yet done so are asked to send their donations to the Honorary Secretary, Professor A. Robertson, Royal (Dick) Veterinary College, Edinburgh, 9, before July 26th in order that the total sum subscribed may be reported at the Annual Meeting during the Congress week.

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Personal Accident and Sickness Insurance Scheme

UNDERWRITING PROFITS FOR VETERINARY BENEVOLENCE

When the above scheme and that for motor insurance were introduced in 1939 by the Association, in conjunction with its Insurance Brokers, Messrs. S. H. Cannon & Co., 112-114, Fenchurch Street, London, E.C.3, two main benefits were envisaged, namely, that

maximum advantage as regards premium rates should be passed to members participating and that through the initiative of Messrs. Cannon & Co. the underwriters would arrange to pay to the Association, for allocation to veterinary benevolent funds, the proportion of any profits which accrued to them from the issue of policies.

As regards the first aspect, we believe these schemes to have met a real need and now that a reduction in staff difficulties has enabled Messrs. Cannon & Co. to assess the position after seven years' operation of the scheme, we are happy to say that a substantial contribution is forthcoming towards meeting the other need—that of veterinary benevolence.

While the motor insurance scheme has yet to find its feet financially, the Personal Accident and Sickness Insurance Scheme has consistently shown a steady and satisfactory increase. In consequence, the Association has now received a cheque for £266, which represents the agreed 10 per cent. of underwriting profit derived from the issue of the latter policies during the years 1939-45 inclusive. We are informed that much new business has come by way of recommendation from one member to another, but particularly worthy of note is the happy circumstance that there has been no claim in respect of fatality or permanent disablement.

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Supplementary Petrol Allowances: Extension of Rationing Periods

We are informed by the Ministry of Fuel and Power that it has been decided to extend the rationing periods for supplementary allowances for private cars, motor cycles and other classes of motor vehicle, from four months to six months.

This extension of the period is designed to assist business and professional car users, by reducing the number of applications they have to make from three to two a year, and also to secure staff savings in Regional Petroleum Offices.

As our readers will be aware, issues of coupons are "staggered" and applicants are divided into four groups covering the present rationing period. The change-over to a six months' period will involve the redistribution of applicants into six groups. In the case of veterinary surgeons, applications will continue to be dealt with in Group 3 and the next rationing period will cover the six months, October 1st, 1947, to March 31st, 1948. This will be made clear in the special printed letter which will accompany the issues of coupons in September next.

The new R(M.S.)1 application form, which will be coming into circulation during the next few weeks, is a good deal simpler than the present form and every question that is not absolutely essential has been eliminated.

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Personal

Mr. W. G. Beaton's Appointment as Director of Veterinary Services, Nigeria

The Colonial Office announces the appointment of Mr. William G. Beaton, M.R.C.V.S., D.T.V.M. (EDIN.), as Director of Veterinary Services in Nigeria, largest of Britain's Colonies. Mr. Beaton, whose home is at Fettes Row, Edinburgh, and who has been in the Nigerian Civil Service since 1925, is promoted from the post of D.D.V.S. in the Colony. Mr. Beaton was born at Chinde in Portuguese East Africa and was, at one time, a veterinary pupil at Kabete in Kenya.

Succeeding Mr. Beaton as Deputy Director is Mr. John Morton, M.R.C.V.S., whose home is in Campbeltown and who was educated at Kiel School and at Glasgow Veterinary College. Between 1927 and 1929 Mr. Morton held the Fraser Research and Scottish Board of Agriculture Scholarships in animal nutrition at the Rowett Research Institute, Aberdeen. He joined the Colonial Service in 1929, his first appointment being in the Falkland Islands. He was transferred to Nigeria in 1933.

Estimates of Nigeria's population vary greatly, but it is believed that there are at least 25,000,000 men, women and children living in this vast British territory, which stretches from the shores of the Gulf of Guinea, in the south, to the fringes of the Sahara, in the north. On March 20th, Governor Sir Arthur Richards opened the new Legislative Council in Lagos; it has a substantial majority of African unofficial members and the revised Constitution which brought it into being marked a big stride forward in Nigeria's steady progress towards the ultimate goal of self-government.

Livestock are of considerable economic importance in the Northern Province of Nigeria, where cattle, sheep and goats are bred in large numbers and horses and donkeys to a smaller extent. There is a big export trade in hides and skins. Epidemics of the various cattle diseases, more especially rinderpest, which in the past swept through the country in recurrent waves and decimated the herds, have now largely been brought under control through the efforts of the Veterinary Department, which maintains a Research Laboratory in which sera and vaccines are produced in large quantities.

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Fifty Years' Service with Council.—Mr. Elmer Ebbetts, M.R.C.V.S., has resigned from the position of veterinary inspector to Rochester Council after 50 years' service.

The post has been filled by Mr. R. A. Edwards, M.R.C.V.S.

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Births.—Griffiths.—On July 3rd, 1947, to Gabrielle, wife of T. L. Griffiths, M.R.C.V.S., Redditch, a third daughter, Joanna Catherine.

Ross.—At Minehead Hospital, Somerset, on July 4th, 1947, to Cicely (*née* Berry), wife of Robert W. Ross, M.R.C.V.S., of 37, Aylands Road, Taunton, a son, Peter Barron.

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Will.—Mr. Thomas M. Inglis, veterinary surgeon, Ingleside, Forfar; net personalty £2,663.

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Cowland Hopkins

A Further Appreciation

(Contributed)

The contributed obituary notice which appeared in your issue of June 7th, though obviously written by one of Hopkins's most ardent admirers, pays, so far as the quotation in it from *The Lancet* writer is concerned, a tribute that is all too niggardly to his outstanding merits. It is hard for anyone who had not watched closely the evolution of events before and after the announcement in 1912 of Hopkins's "accessory food factors" to appreciate the tremendous effort in transition of human thought it required to grasp that, as a report of the Medical Research Council later had it, disease could be produced by something bearing a *minus* sign as well as by something bearing a *plus* sign. The present writer remembers well walking down the back of the old London College as a young assistant with the late Sir John M'Fadyean about the year 1912 and hearing him exclaim, characteristically, on seeing a horse eating bran, that he had always thought the College might as well be "spending its money on brown paper as on bran." All that was necessary as a supplement to pathology was at the time, to him, "bacteriology." The writer again remembers attending the banquet given by the Biochemical and other learned Societies in 1930 in honour of the four Nobel Laureates, Hopkins, Eijkmann, Harden and a Swedish scientist whose name he cannot now remember. The speech then made by the President of the evening, Sir Charles Martin, Director of the Lister Institute, who happily is still with us, remains firmly fixed in the writer's memory. It is clearest in respect of the part in the speech which testified to the real merits of Eijkmann's work, but almost the same exactly, in substance, as we can now perceive, could apply to Hopkins's work too. Eijkmann was engaged in Java in some kind of bacteriological work in which he employed pigeons, and these happened to be produced to him suffering from the disease which has since then come to be known as "polyneuritis." Having failed entirely through bacteriological tests to elucidate the cause of that disease, Eijkmann, so said Martin, did something which was really remarkable. Instead of saying "damn those pigeons, I can find nothing wrong with them" and going away to enjoy himself, he went out to see just how the pigeons were kept, and then found that, among other things, a change had been made in their food, the unhusked rice on which they had previously been fed having been replaced by polished rice. Then Eijkmann proceeded, with the results that have now become classical, to investigate whether any upset had occurred through the omission of the husks.

At the time the present writer was engaged, in 1920, in the teaching of Hygiene and Dietetics at the London College and was recasting his notes for that teaching from the current literature on nutrition, a plethora of what then seemed to be brilliant work was appearing, especially from American workers, suggesting the overwhelming importance of the various "bricks" in the protein constituent of a dietary. That quality we still know to be important, but at that date there was no clear conception that its importance was destined to be dwarfed by the immense knowledge which was to accrue quickly, resulting from the "infinite capacity for taking pains," that is, the "genius," of Hopkins, with his "fat-soluble accessory factors," and Eijkmann, with his "water-soluble" ones. True, the Lister workers, Miss Chick and Miss Hume, were just then, in 1920, obtaining convincing evidence from their observations on half-starved children in Austria after the first world war that the addition of cod-liver oil to the diet prevented the onset of rickets. But as late as 1929, when the present writer joined the

Lister Institute after a stay abroad, the belief was current that somehow Hopkins, in the work which he had published in 1912, must have erred, because other workers could not confirm his original reports that the addition of a small quantity of fresh butter, in itself far too small to supply the necessary supplementary requirements for energy, to the highly purified, synthetic diets fed to rats, caused them to recover from symptoms of "deficiency," grow and regain vitality. It was only when nutrition workers there and elsewhere came to realize the infinite pains that must be taken with their own hands and eyes to obtain trustworthy results of any kind in nutritional research that it was appreciated that Hopkins was, after all, perfectly right. His early upbringing had caused him to take pains in his own work which other people later overlooked or forsook as either too irksome or too menial.

Hopkins was not nearly so well known to the present writer as his friend and contemporary Harden, to whom Miss Muriel Robertson paid the brilliantly feminine tribute, on presenting to him his portrait in oils on behalf of the Lister staff on retirement, that he was "the least stupid of the distinguished men she had ever known." Both men were alike characterized by their extreme humility and modesty. They were probably the least aggressive of all men, and were such as to evoke audible remarks—from such as those whom Miss Robertson with her frankness would undoubtedly classify as "stupid"—such remarks indeed as were also hurled at Abraham Lincoln, that they were, in appearance, merely "common" men. As that truly great man, however, retorted, "it must be that God likes 'common' men—He made so many of them." The world, however, still, sad to say, appreciates men more for their "stupidity"—for their showiness, pretentiousness, and the horse-power of their motor cars and the size of the abodes they live in, than for the sterling hidden qualities of a timid man like Hopkins, who, it is said, at Cambridge would stand aside for his lab. boy to pass him on the stairs. So, while Hopkins and his kind have contributed immeasurably to the sum total of human knowledge, the example of their lives perhaps has still not affected equally much—or at least not as much as it ought—our sense of moral values.

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LEGAL NOTES

Anti-Vivisection Society not a Charity

Lords Dismiss Appeal

On Wednesday of last week the House of Lords—Lord Simon, Lord Wright, Lord Simonds and Lord Normand, Lord Porter dissenting—dismissed the appeal of the National Anti-Vivisection Society from the majority decision of the Court of Appeal (Lord Justice MacKinnon and Lord Justice Tucker, the Master of the Rolls dissenting), who held that the Society was not entitled, under Section 37 (1) of the Income Tax Act, 1918, to exemption from income tax on the income of its investments as a body established for charitable purposes only.

The majority further held that the appeal failed because a main purpose of the Society was to obtain the suppression of vivisection by legislation.

[A detailed review of this important case appeared in these columns on September 22nd, 1945. In our issue of August 10th, 1945, we reported the judgment of Mr. Justice Macnaghten, who, allowing an appeal by the Crown from a decision of the Commissioners for the special purposes of the Income Tax Acts, decided that the Society was not entitled to exemption. On December 20th, 1945, the Court of Appeal, by a majority, dismissed the Society's appeal against the judgment, the Crown contending that, if vivisection were abolished, medical science and research would be retarded, and benefit to the health of the community frustrated. The judgments given on that occasion by Lord Justice MacKinnon and by the Master of the Rolls (dissenting) were published in our issue of December 29th, 1945.]

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The "Royal" Show

The number and quality of the exhibits, and the vast attendance at Lincoln last week, proved once again that the annual exhibition of the Royal Agricultural Society of England retains its honoured place as the premier show of its kind. All those responsible for the organization of this year's great event are to be congratulated upon its success and the way in which all difficulties triumphantly were overcome.

The turn-out of animals was excellent, although in some classes the number of competitors was less than might have been desired. Amongst the "heavies" one feature would appear to be the gradual approach of the Shire and the Clydesdale breeds: in certain instances, indeed, it was very difficult to determine at a glance into which class an animal would be included—this perhaps reflects the success of the recent trend in Shire breeding to reduce weight and feather.

From the veterinary angle this show was remarkable from two points of view; firstly, that this was the first occasion upon which the "Royal" has insisted upon the cattle exhibited being free from tuberculosis, and secondly, the inclusion of a stand by the Veterinary Educational Trust. This was simple in character, but created considerable interest and served as a rallying point for members of the profession. Great interest was exhibited in the Trust and particularly in the two films, "Hygiene on the Farm" and a new one, "Sterility in Dairy Cattle," which were shown during the week.

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ADMINISTRATIVE CIVIL SERVANTS' PAY

The Association of First Division Civil Servants announces that the Chancellor of the Exchequer had assured a deputation that he would consider a request to increase the salaries of certain high-grade officials in the administrative class of the Civil Service.

The increases requested are: under-secretary, £2,000 to £2,750; assistant secretary, £1,700 to £2,250; principal, £1,220 to £1,600; and assistant principal, £720 to £800. Increased starting salaries and annual increments are also claimed. It is estimated that the new scales will cost from £200,000 a year initially to £600,000 ultimately. About 2,500 officials are affected.

The Association points out that many other groups of salary and wage-earners have secured big increases in pay, and that administrative Civil Servants have lost their relative status. In the long run this would affect adversely their contentment and efficiency.

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R.S.P.C.A. HUMANE TRAP FOR RABBITS

For many years, in and out of Parliament, the R.S.P.C.A. has taken the lead in the campaign for the substitution for the gin trap of a rabbit trap which would ensure the abolition of pain—if one could be found. To this end an award was announced to the inventor who could meet the requirements of the Society, and at the annual meeting recently held in London, Sir Robert Gower intimated that success had been achieved, the £300 award going to Mr. F. E. Sawyer, a water bailiff of Netheravon, Wilts. Sir Robert said it would cost the Society £12,000 to put the new trap on the market. That was a small sum to spend in saving 30 million rabbits annually from agonizing death. He added: "The invention is just what we have been seeking all these years. It kills instantly and is therefore painless. We hope to manufacture it on a large scale and enforce it as a substitute for the gin trap."

Sir Robert Gower urged that the gin trap should be relegated to the museums along with the rack, the thumbscrew and the whipping post. A resolution had been sent to the Ministry of Supply asking for a steel allocation.

Referring to other activities of the R.S.P.C.A., Sir Robert said not the least urgent of the problems facing them was the suffering inflicted upon animals in the markets of Great Britain. As to cruelty in slaughterhouses, most of them needed re-designing so that the animal was assured of a swift death. They could now enter the 400 controlled by the Ministry of Food, and hoped to obtain entry to about 200 controlled by local authorities.

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ADDRESSES OF DISEASE-INFECTED PREMISES

The list given below indicates, first, the county in which are situated the premises on which disease has been confirmed, followed by the postal address and date of outbreak.

Foot and-Mouth Disease:

Glamorgan.—Beeches Farm, St. Nicholas, Glam. (July 2nd, 1947).

Sheep Scab:

Montgomery.—Glanhafon Isa, Panybont Fawr, Montgomery (July 3rd).

Yorks (*W.R.*).—Newby Cote, Clapham, Lancaster (June 27th); West Chapel House, Chapel-le-Dale, Ingleton, Carnforth, Lancs. (June 27th).

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V.V.B.F. Ladies' Guild

Garden Fete at Roslin

We are glad to learn that the Victoria Veterinary Benevolent Fund will benefit by the sum of £75 5s., as the splendid result of a most enjoyable and successful garden fête organized by members of the Ladies' Guild. This took place on Saturday, June 28th, at "Hillwoodlee," Roslin, near Edinburgh, by kind permission of Mr. and Mrs. J. N. Ritchie. Ideal weather favoured the fête, and the side shows, run by students from the R.(D.)V.C., were well patronized. Tea on the lawn was also a popular feature.

The British Medical Association proposes to establish a Medical Film Bureau, primarily to serve Branches of the Association, and also to act as a central office to facilitate, co-ordinate, and assist in an advisory capacity the production of medical films in association with other bodies in this field. In addition the Bureau will (*a*) publish up-to-date information and answer questions relating to medical films; (*b*) arrange for the appraisal and grading of medical films; and (*c*) arrange film shows as requested.

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Weekly Wisdom

. . . He (Adler) denies, for example, repression. Freud relates how Adler once said, "If you ask whence comes repression you are told: from culture. But if you ask whence comes culture, the reply is: from repression. So, you see, it is only a question of words." Freud said in reply that "there is nothing mysterious about it, except that culture depends on acts of repression of former generations, and that each new generation is required to retain this culture by carrying out the same repressions. I have heard of a child that considered itself fooled and began to cry because to the question, 'Where do eggs come from?' it received the answer, 'Eggs come from hens.' And to the further question, 'Where do hens come from?' the information was, 'From the eggs.' And yet this was not a play upon words. The child had been told what was true."—C. Allen (1938) *Modern Discoveries in Medical Psychology.* (Macmillan.)

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Addressing the Canterbury Farmers' Club, Professor W. H. Miles, of Wye, uttered a serious warning about the soil becoming bankrupt through humus deficiency. The story of British agriculture presented a number of examples, such as those in Lincs., Worcs., Yorks., Lancs., and parts of Wilts. and Dorset, through land being used year after year for cash or arable crops without return of organic matter.

CORRESPONDENCE

The views expressed in letters addressed to the Editor represent the personal opinions of the writer only and their publication does not imply endorsement by the N.V.M.A.

Correspondents should write as briefly as possible and letters should not exceed 350 words.

PREGNANCY DIAGNOSIS BY PALPATION OF FOETAL MEMBRANES

Sir,—The Veterinary Medical Association of Ireland held a meeting in the Veterinary College on May 9th at which Mr. Steele-Bodger gave some demonstrations, followed in the evening by an address on dairy cattle diseases including infertility.

In his reply to the discussion, during which I remarked that palpation of the foetal membranes is the most reliable method of diagnosing pregnancy in the early stages, I gathered from his remarks, with some surprise, that he considers it an impossibility. I would like to defend my statement through the medium of your columns as the opportunity did not arise at the meeting. The diagnosis of pregnancy by this method is practised by such well-known veterinarians as Spriggs, Rowson, Henderson and others amongst whom I had the privilege and pleasure of working. It may be a little more difficult in the beginning to palpate the foetal membranes than merely an enlarged uterine horn, but after a little experience it becomes quite easy.

I should also like to take this opportunity to make it clear that any statement I made concerning hormones was backed by experimental proof.

Yours faithfully,

Veterinary Infirmary, W. F. Davison, F.R.C.V.S.
171a, Parnell Street,
Dublin, C.9.
June 20th, 1947.

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THE MAJOR DISEASES OF DAIRY CATTLE

Sir,—If one looks back through the arches of the years, I think that whilst it is probably true that the average farmer knew little or nothing of these diseases, it is incorrect to infer that they were non-existent. They were in existence all right, but to nothing like the extent to which they are to-day, and their significance for the most part passed unnoticed.

I am in agreement with your correspondent on the possible connection between artificial feeding and manuring, and the incidence of these diseases, and he is most certainly correct in his criticism of the breeders.

In the thoroughbred world we have clear evidence of the folly of sacrificing stamina for speed. We hear a very great deal about hereditary factors and genes, but the deciding one will be that which makes the mentality of the breeder.

The bovine to-day is a purely artificial product, bred and fed for milk, and annually is expected to accomplish what is impossible without natural penalty. The folly of trying to beat existing milk records is bringing its inevitable result. The udder will beat the uterus every time. When a return to sanity takes place in all spheres of animal breeding and more attention is paid to physiology and dietetics, then the incidence of certain diseases may show a sharp decline.

Yours faithfully,

"Rothiemurchus," J. F. D. Tutt.
St. Cross, Winchester.
July 1st, 1947.

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PUBLIC RELATIONS AND THE VETERINARY PROFESSION

Sir,—In this week's *Record* I have read the article on Public Relations.

It is the most advanced and most masterly article that I have been privileged to read for a very long time.

I hope that the fulfilment of this aim may at long last allow the general public to realize that although a very small profession, there are facts about our work and qualifications that are of interest to them, but have never yet been explained.

Congratulations !

Yours faithfully,

Woodcote, Malcolm Park.
Crawley Lane,
Crawley, Sussex.
July 4th, 1947.

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MINISTRY OF AGRICULTURE—VETERINARY APPOINTMENTS

Sir,—At the Christmas Executive meeting the delegates from all the colleges were in favour of complete support to the N.V.M.A. stand in the Ministry dispute. This support was endorsed at the Annual Conference. It is therefore hoped that the members of the Association of Veterinary Students qualifying in the near future will approach the N.V.M.A. before accepting a Ministry position.

Yours faithfully,

Association of Veterinary Students, G. E. Broughton,
Leahurst, *Hon. Secretary.*
Windle Hill,
Neston, Wirral.
June 30th, 1947.

DISEASES OF ANIMALS ACTS, 1894 TO 1937, AND AGRICULTURE ACT, 1937 (PART IV).

Summary of Returns of Confirmed Outbreaks of Scheduled (Notifiable) Diseases

Period	Anthrax	Foot-and-mouth	Fowl Pest	Parasitic Mange*	Sheep Scab	Swine Fever
June 1st to 15 h. 1947	5	9	117	—	1	1
Corresponding period in—						
1946	2	2	—	—	—	13
1945	4	2	—	—	1	37
1944	5	1	—	—	—	34
Jan. 1st to June 15 h, '47	44	92	450	1	23	15
Corresponding period in—						
1946	49	26	—	4	34	265
1945	52	79	—	5	38	489
1944	107	22	—	6	59	359

Note.—The figures for the current year are approximate only.
*** Excluding outbreaks in Army Horses.**